

WHAT IS CLAIMED IS:

1. A race car virtual reality simulator in which substantially all of the components are mounted within the simulator comprising:

5 a chassis constructed from welded steel tubes and shaped aluminum sheets;

a body of fiber-reinforced plastic;

10 a tube frame cockpit having a steering wheel, other automobile controls, and one or more seats;

15 a hood hinged at the front of said race car simulator;

first and second mirrors;

20 a computer projector mounted below or partially below the floor board of the cockpit, said projector mounted to project a computer display image onto said first mirror;

25 a rear projection screen;

30 said first mirror mounted to project the computer display image onto said second mirror and said second mirror mounted to project the computer display image onto the rear of said rear projection screen; and

35 a spherical mirror mounted to the underside of said hood to provide the viewer with an enlarged life-like image of the rear projection screen when said hood is raised, said spherical mirror comprising a thin acrylic sheet molded to the desired curvature, a mirror surface on one side of said sheet, and a sheet of foam plastic scored on one side so that the foam plastic sheet conforms to the curvature of said molded acrylic mirror, said scored foam plastic sheet bonded to the back of said acrylic mirror;

40 said first and second mirrors rotatably attached to said chassis and rotatable from a first position where said hood is closed to a second position where said hood is raised.

45 2. A race car virtual reality simulator in which substantially all of the components are mounted within the simulator comprising:

50 a chassis constructed from welded steel tubes and shaped aluminum sheets;

55 a body of fiber-reinforced plastic;

a tube frame cockpit having a steering wheel, other automobile controls, and one or more seats;

a hood hinged at the front of said race car simulator;

first and second mirrors;

a computer projector mounted below or partially below the floor board of the cockpit, said projector mounted to project a computer display image onto said first mirror;

a rear projection screen;

said first mirror mounted to project the computer display image onto said second mirror and said second mirror mounted to project the computer display image onto the rear of said rear projection screen; and

a spherical mirror mounted to the underside of said hood to provide the viewer with an enlarged life-like image of the rear projection screen when said hood is raised.

15 3. A race car virtual reality simulator comprising:

a computer;

a projector coupled to said computer mounted below the eyes of the viewer;

an optics system having first and second mirrors;

a real projection screen; and

a spherical mirror mounted to reflect to the viewer the image of said rear projection screen;

said optics system folding the computer display image two times.

20 4. A race virtual reality simulator comprising:

a projector mounted below the eyes of the viewer;

a rear projection screen mounted below the eyes of the viewer onto which the projector projects an image; and

a spherical mirror mounted to reflect the image of said rear projection screen to the eyes of the viewer.

25 5. An apparatus for providing a display system and user interface for an interactive computer system comprising an enclosed cockpit in a vehicle, a display

system having a view of a computer generated simulation environment, and an interface for providing communication from the user to the interactive computer system.

6. The apparatus recited in Claim 5, further comprising a dimensional sound system.

5 7. The apparatus recited in Claim 5, further comprising a cockpit for an interactive computer system comprising a covered frame housing, and located within said covered frame and housing, a dimensional sound system, an infinity optics display system, and an interface for providing communication from the user to the interactive computer system.

10 8. The cockpit recited in Claim 7, wherein the covered frame and housing are totally enclosed in a themed vehicle as part of the immersive simulated experience.

9. The cockpit recited in Claim 6, wherein the dimensional sound system is a quadraphonic sound balanced three-dimensional (3D) localization system.

10 10. The apparatus of Claim 5, further comprising a plurality of fully 15 configurable interactive displays.

11. An apparatus of Claim 5, wherein the cockpit is substantially totally enclosed.

12. The apparatus of Claim 5, wherein the display system is an infinity optics display system unaffected by ambient light.

20 13. The apparatus of Claim 5, wherein the plurality of fully configurable interactive displays is configured with bitmaps through a digital project or with a single lens.

14. A curved mirror comprising:

a thin acrylic sheet molded to the desired curvature;

25 a mirror surface on one side of said sheet;

a sheet of foam plastic scored on one side so that the foam plastic sheet conforms to the curvature of said molded acrylic mirror, said scored foam plastic sheet bonded to the back of said acrylic mirror to rigidly support said acrylic sheet in said desired curvature.

30 15. A method for making a curved mirror comprising:

molding a thin acrylic sheet to the desire curvature;

vacuum plating a mirror surface to one side of said acrylic sheet;

Scoring one side of a sheet of foam plastic so that said sheet will conform to the curvature of said acrylic sheet; and
bonding said sheet of foam plastic to the opposite side of said acrylic sheet.

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